AUTHOR INDEX

Adams, L., see Banzett, R.B., 1
Adamson, T.P., see Estavillo, J.A., 349
Agostoni, E. and Zocchi, L., Solute-coupled liquid absorption from the pleural space, 19
Ahn, B., see Pokorski, M., 189

Banzett, R.B., Lansing, R.W., Brown, R., Topulos, G.P., Yager, D., Steele, S.M., Londoño, B., Loring, S.H., Reid, M.B., Adams, L. and Nations, C.S., 'Air hunger' from increased P_{CO_2} persists after complete neuromuscular block in humans, 1
Berthon-Jones, M., see Plowman, L., 321
Boutilier, R.G., see Pörtner, H.O., 255
Brain, A.P.R., see Schroter, R.C., 381
Brown, R., see Banzett, R.B., 1
Burger, R.E., see Estavillo, J.A., 349
Burnet, H., Lucciano, M. and Jammes, Y., Respiratory effects of cold-gas breathing in humans under hyperbaric environment, 413

Castriotta, R.J., see Frey, T.M., 303
Chappell, M.A. and Roverud, R.C., Temperature effects on metabolism, ventilation, and oxygen extraction in a Neotropical bat, 401
Corfield, D.R., see Cross, B.A., 99
Cormier, Y., see Sériès, F., 153
Crapo, R.O., see Frey, T.M., 303
Cross, B.A., Corfield, D.R., Howells, K.D., Stidwill, R.P., Newman, G.B. and Semple, S.J.G., Carotid chemoreceptor response to increases in CO_2 output, 99

Daubenspeck, J.A., see Giering, R.W., 371
Desmeules, M., see Sériès, F., 153

Estavillo, J.A., Adamson, T.P. and Burger, R.E., Middle cardiac nerve section alters ventilatory response to Pa_{CO_2} in the cockerel, 349

Filali, R.Z., see Schroter, R.C., 381
Fitzgerald, R.S., Shirahata, M. and Lahiri, S., Amiloride and carotid body chemoreception of hypercapnia and hypoxia, 337
Frey, T.M., Crapo, R.O., Jensen, R.L., Kanner, R.E., Kass, J.E., Castriotta, R.J. and Mohsenifar, Z., Adjustment of DLco for varying COHb, and alveolar P_{O_2} using a theoretical adjustment equation, 303

Giering, R.W. and Daubenspeck, J.A., Time course of laryngeal aperture response to expiratory resistance loading in humans, 371
Guerra, L.F., see Javaheri, S., 359
Guz, A., see Hamilton, R.D., 87

Hamilton, R.D., Horner, R.L., Winning, A.J. and Guz, A., Effect on breathing of raising end-expiratory lung volume in sleeping laryngectomized man, 87
Hartley, R.S., Expiratory muscle activity during song production in the canary, 177
Haselton, J.R., see Padrid, P.A., 51
Haxhiu, M.A., see Oliven, A., 165
Hilaire, G., see Monteau, R., 241
Honda, Y., see Pokorski, M., 189
Horner, R.L., see Hamilton, R.D., 87
Howells, K.D., see Cross, B.A., 99

Ikeda, K., Sasaki, T., Shimura, S., Satoh, M., Ishihara, H., Sasaki, H., Takishima, T., Saitoh, Y. and Nishiyama, A., Effect of surfactant on bioelectric properties of canine tracheal epithelium, 41
Ishihara, H., see Ikeda, K., 41

Jammes, Y., see Burnet, H., 413
Javaheri, S. and Guerra, L.F., Effects of domperidone and medroxyprogesterone acetate on ventilation in man, 359
Jeffery, P.K., see Schroter, R.C., 381
Jensen, R.L., see Frey, T.M., 303
Johnson, D.H., see Mayers, I., 63

Kahmnei, S. and Robbins, P.A., Hypoxic depression of ventilation in humans: alternative models for the chemoreflexes, 117
Kanner, R.E., see Frey, T.M., 303
Kass, J.E., see Frey, T.M., 303
Kaufman, M.P., see Padrid, P.A., 51
Kelsen, S.G., see Oliven, A., 165
Kim, K.-J., Active Na^+ transport across *Xenopus* lung alveolar epithelium, 9

Lahiri, S., see Fitzgerald, R.S., 337
Lai, S.-L., see Shi, M.X.J., 75
Lansing, R.W., see Banzett, R.B., 1
Lauff, D.C., see Plowman, L., 321
Londoño, B., see Banzett, R.B., 1
Londraville, R.L. and Sidell, B.D., Maximal diffusion-distance within skeletal muscle can be estimated from mitochondrial distributions, 291
Loring, S.H., see Banzett, R.B., 1
Lucciano, M., see Burnet, H., 413

Maskrey, M., Megirian, D. and Sherrey, J.H., Alteration in breathing of the awake rat after laryngeal and diaphragmatic muscle paralysis, 203
Masuda, A., see Pokorski, M., 189
Mayers, I. and Johnson, D.H., Vasodilators do not abolish pulmonary vascular critical closing pressure, 63
Megirian, D., see Maskrey, M., 203
Megirian, D., see Sherrey, J.H., 213
Meyer, M., Mohr, M., Schulz, H. and Piiper, J., Sloping alveolar plateaus of CO_2, O_2, and intravenously infused C_2H_2 and $CHClF_2$ in the dog, 137
Mohr, M., see Meyer, M., 137
Mohsenifar, Z., see Frey, T.M., 303
Monteau, R., Morin, D. and Hilaire, G., Acetylcholine and central chemosensitivity: in vitro study in the newborn rat, 241
Morin, D., see Monteau, R., 241

Nations, C.S., see Banzett, R.B., 1
Newman, G.B., see Cross, B.A., 99
Nishibayashi, Y., see Pokorski, M., 189
Nishiyama, A., see Ikeda, K., 41
Numata, H., see Suzuki, S., 313

Okubo, T., see Suzuki, S., 313
Oliven, A., Haxhiu, M.A. and Kelsen, S.G., Distribution of motor activity to expiratory muscles during sciatic nerve stimulation in the dog, 165

Padrid, P.A., Haselton, J.R. and Kaufman, M.P., Ischemia potentiates the reflex bronchodilation evoked by static muscular contraction in dogs, 51
Paulev, P-E., see Pokorski, M., 189
Piiper, J., see Meyer, M., 137
Plowman, L., Lauff, D.C., Berthon-Jones, M. and Sullivan, C.E., Abdominal muscle activity in conscious dogs: effect of sleep and route of breathing, 321
Pokorski, M., Masuda, A., Paulev, P-E., Sakakibara, Y., Ahn, B., Takaishi, S., Nishibayashi, Y. and Honda, Y., Ventilatory and cardiovascular responses to hypoxic and hyperoxic static handgrip exercise in man, 189
Pörtner, H.O., Boutilier, R.G., Tang, Y. and Toews, D.P., Determination of intracellular pH and P_{CO_2} after metabolic inhibition by fluoride and nitrilotriacetic acid, 255
Pörtner, H.O., Determination of intracellular buffer values after metabolic inhibition by fluoride and nitrilotriacetic acid, 275

Reid, M.B., see Banzett, R.B., 1
Robbins, P.A., see Kahmnei, S., 117
Robertshaw, D., see Schroter, R.C., 381
Roverud, R.C., see Chappell, M.A., 401

Saitoh, Y., see Ikeda, K., 41
Sakakibara, Y., see Pokorski, M., 189
Sasaki, H., see Ikeda, K., 41
Sasaki, T., see Ikeda, K., 41
Satoh, M., see Ikeda, K., 41
Schroter, R.C., Filali, R.Z., Brain, A.P.R., Jeffery, P.K. and Robertshaw, D., Influence of dehydration and watering on camel red cell size: a scanning electron microscopic study, 381
Schulz, H., see Meyer, M., 137
Semple, S.J.G., see Cross, B.A., 99
Sherrey, J.H. and Megirian, D., After phrenicotomy the rat alters the output of the remaining respiratory muscles without changing its sleep-waking pattern, 213
Sherrey, J.H., see Maskrey, M., 203
Shi, M.X.J. and Lai, S.-L., The role of tachykinins

in air ventilation-induced bronchoconstriction in postmortem guinea pigs, 75
Shimura, S., see Ikeda, K., 41
Shirahata, M., see Fitzgerald, R.S., 337
Sidell, B.D., see Londraville, R.L., 291
Steele, S.M., see Banzett, R.B., 1
Stidwill, R.P., see Cross, B.A., 99
Sullivan, C.E., see Plowman, L., 321
Suzuki, S., Numata, H. and Okubo, T., Effect of alveolar pressure on single-breath CO diffusing capacity at mid-lung volume, 313
Sériès, F., Cormier, Y. and Desmeules, M., Alcohol and the response of upper airway resistance to a changing respiratory drive in normal man, 153

Takaishi, S., see Pokorski, M., 189
Takeda, T., Ventilation, cardiac output and blood respiratory parameters in the carp, *Cyprinus carpio*, during hyperoxia, 227
Takishima, T., see Ikeda, K., 41
Tang, Y., see Pörtner, H.O., 255
Toews, D.P., see Pörtner, H.O., 255
Topulos, G.P., see Banzett, R.B., 1

Vitalis, T.Z., Pulmonary and cutaneous oxygen uptake and oxygen consumption of isolated skin in the frog, *Rana pipiens*, 391

Winning, A.J., see Hamilton, R.D., 87

Yager, D., see Banzett, R.B., 1

Zocchi, L., see Agostoni, E., 19

SUBJECT INDEX

Acetylcholine, Animal, rat, Central chemosensitivity, effect of acetylcholine, Chemoreceptor, central, Drug, atropine, muscarine antagonists, physostigruive, Neonatal rat, 241

Airway pressure, Airway resistance, upper –, Alcohol, and airway resistance, Animal, man, CO_2 rebreathing, Respiratory drive, 153

Airway resistance, and exercise, Airway smooth muscle, control of –, Animal, dog, Bronchodilation, Exercise, and airway resistance, 51

Airway resistance, and heart ligation, Animal, guinea pig, Bronchoconstriction, and tachykinins, Tachykinin, 75

Airway resistance, upper –, Airway pressure, Alcohol, and airway resistance, Animal, man, CO_2 rebreathing, Respiratory drive, 153

Airway resistance, upper airways, Animal, dog, EMG, of abdominal muscles, Respiratory muscles, abdominal –, activity during sleep, Sleep, and respiratory muscles, Wakefulness, and respiratory muscles, 321

Airway resistance, larynx, Animal, man, Larynx, aperture during breathing, Resistive loading, laryngeal response to –, Upper airways, receptors in –, 371

Airway resistance, effects of cold gas breathing, Animal, man, Hyperbaric respiratory gas, Temperature, cold gas breathing, 413

Airway smooth muscle, control of –, Airway resistance, and exercise, Animal, dog, Bronchodilation, Exercise, and airway resistance, 51

Alcohol, and airway resistance, Airway pressure, Airway resistance, upper –, Animal, man, CO_2 rebreathing, Respiratory drive, 153

Alveolar epithelium, ion fluex, Animal, *Xenopus laevis*, Drugs, amiloride, ouabain, Electric properties, of alveolar epithelium, Epithelium membrane potential, Ion fluxes, in alveolar epithelium, 29

Alveolar pressure, and lung diffusing capacity, Animal, man, Capillary blood volume, Diffusing capacity of the lung, for CO, effects of alveolar pressure, Lung volume, and diffusing capacity, 313

Animal, camel, Blood, red cell size, Dehydration, and camel red cell size, Osmotic pressure, and red cell size, Red blood cell, size and water exchange, Watering, and camel red cell size, 381

Animal, cockerel, Chemoreceptor, middle cardiac nerves in birds, intrapulmonary – in birds, Control of breathing, chemosensitivity in birds, CO_2 sensitivity, and middle cardiac nerves in birds, Nerve afferent, middle cardiac nerves in birds, 349

Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Respiratory muscle, effects of muscle paralysis, Sleep, and respiratory pattern, 213

Animal, Antarctic fish, Capillaries, density in skeletal muscle, tortuosity, Diffusion, of O_2 in tissue, Mitochondria, distribution of – in skeletal muscle, Skeletal muscle, diffusion distance, capillary supply, 291

Animal, bat, Evaporative water loss, in the bat, Metabolism, in the bat, Temperature, ambient – and respiration in the bat, 401

Animal, cat, Chemoreceptor, arterial, Control of breathing, Effect of oscillations of arterial P_{CO_2} and pH, Oscillation of arterial P_{CO_2} and pH, Oscillation and ventilation, 89

Animal, canary, Electromyogram, of respiratory muscles, Respiratory muscle, during bird song, Song production, in birds, 177

Animal, carp, Blood, O_2 transport properties, Cardiac output, during hyperoxia in carp, Hyperoxia, and ventilation in carp, 227

Animal, cat, Carotid body, and amiloride, Drug, amiloride, Hypercapnia, Hypoxia, ion exchange, Na^+-H^+ antiporter, 337

Animal, dog, Drug, amiloride, furosemide, ouabain, Electric properties of tracheal epithelium, Ion transport, at tracheal epithelium, Sur-

factant, and tracheal epithelium, Tracheal epithelium, bioelectric properties, 41

Animal, dog, Airway resistance, and exercise, Airway smooth muscle, control of –, Bronchodilation, Exercise, and airway resistance, 51

Animal, dog, Pulmonary circulation, pressure–flow relation, Pulmonary vascular resistance, Vasodilator, of pulmonary vessels, Vasomotor tone in pulmonary circulation, 63

Animal, dog, Dead space, and sloping alveolar plateau, Diffusion, in lung gas, Gas exchange, inert gases, respiratory gases, Gas mixing, in alveolar lung, Inert gases, acetylene, Freon 22, Ventilation/perfusion heterogeneity, 137

Animal, dog, Electromyogram of respiratory muscle, Expiratory muscle, afferent neural drive, Inspiratory muscle, and hypercapnia, Respiratory muscle, expiratory –, inspiratory –, 165

Animal, dog, Airway resistance, upper airways, EMG, of abdominal muscles, Respiratory muscles, abdominal –, activity during sleep, Sleep, and respiratory muscles, Wakefulness, and respiratory muscles, 321

Animal, frog, Cutaneous O_2 uptake, in the frog, Oxygen uptake, across the skin, 391

Animal, guinea pig, Airway resistance, and heart ligation, Bronchoconstriction, and tachykinins, Tachykinin, 75

Animal, man, Breath holding, Breathlessness, Dyspnea, Hypercapnia, sensation of –, Paralysis, Respiratory muscle, paralysis, Sensation of respiration, 1

Animal, man, Pattern of breathing, and lung volume, Sleep, and pattern of breathing, Vagus nerve, and pattern of breathing, 77

Animal, man, Chemoreceptor reflex, Control of breathing, effects of hypoxia, Hypoxia, Model, of hypoxic ventilatory response, 107

Animal, man, Airway pressure, Airway resistance, upper –, Alcohol, and airway resistance, CO_2 rebreathing, Respiratory drive, 153

Animal, man, Control of breathing, arterial chemoreceptors, Exercise, static –, Exercise, ventilatory and cardiovascular responses to –, Hyperoxia, and ventilatory responses to exercise, Hypoxia, and ventilatory responses to exercise, 189

Animal, man, Carboxyhemoglobin, and pulmonary diffusing capacity, Diffusing capacity for CO, Pulmonary capillary volume, 303

Animal, man, Alveolar pressure, and lung diffusing capacity, Capillary blood volume, Diffusing capacity of the lung, for CO, effects of alveolar pressure, Lung volume, and diffusing capacity, 313

Animal, man, Carotid bodies, and dopamine, Chemoreceptor, modulation by dopamine, Drug, domperidone, medroxyprogesterone acetate, Neurotransmitter, dopamine, 359

Animal, man, Airway resistance, larynx, Larynx, aperture during breathing, Resistive loading, laryngeal response to –, Upper airways, receptors in –, 371

Animal, man, Airway resistance, effects of cold gas breathing, Hyperbaric respiratory gas, Temperature, cold gas breathing, 413

Animal, rabbit, Drug, amiloride, Drug, bumetamide, disulfonic stilbene, ouabain, Ion transport, across the pleura, Na^+-Cl^- coupled transport, Pleura, liquid resorption, 19

Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Recurrent pharyngeal nerve, Respiratory muscles, effects of paralysis on respiration, 203

Animal, rat, Acetylcholine, Central chemosensitivity, effect of acetylcholine, Chemoreceptor, central –, Drug, atropine, muscarine antagonists, physostigruive, Neonatal rat, 241

Animal, rat, sipunculid, squid, toad, trout, Buffer value, heart, muscle, Drug, fluoride, nitrilotriacetic acid, Heart, buffer value, Muscle, buffer values, pH, intracellular –, 255

Animal, squid, toad, Buffer value, Dissociation constant, apparent –, Drug, fluoride, nitrilotriacetic acid, Metabolic inhibitor, Muscle, gastrocnemius – of toad, mantle – of squid, 275

Blood, O_2 transport properties, Animal, carp, Cardiac output, during hyperoxia in carp, Hyperoxia, and ventilation in carp, 227

Blood, red cell size, Animal, camel, Dehydration, and camel red cell size, Osmotic pressure, and red cell size, Red blood cell, size and water exchange, Watering, and camel red cell size, 381

Breath holding, Animal, man, Breathlessness, Dyspnea, Hypercapnia, sensation of –, Paralysis, Respiratory muscle, paralysis, Sensation of respiration, 1

Breathlessness, Animal, man, Breath holding,

Dyspnea, Hypercapnia, sensation of –, Paralysis, Respiratory muscle, paralysis, Sensation of respiration, 1

Bronchoconstriction, and tachykinins, Airway resistance, and heart ligation, Animal, guinea pig, Tachykinin, 75

Bronchodilation, Airway resistance, and exercise, Airway smooth muscle, control of –, Animal, dog, Exercise, and airway resistance, 51

Buffer value, heart, muscle, Animal, rat, sipunculid, squid, toad, trout, Drug, fluoride, nitrilotriacetic acid, Heart, buffer value, Muscle, buffer values, pH, intracellular –, 255

Buffer value, Animal, squid, toad, Dissociation constant, apparent –, Drug, fluoride, nitrilotriacetic acid, Metabolic inhibitor, Muscle, gastrocnemius – of toad, mantle – of squid, 275

CO_2 rebreathing, Airway pressure, Airway resistance, upper –, Alcohol, and airway resistance, Animal, man, Respiratory drive, 153

CO_2 sensitivity, and middle cardiac nerves in birds, Animal, cockerel, Chemoreceptor, middle cardiac nerves in birds, intrapulmonary – in birds, Control of breathing, chemosensitivity in birds, Nerve afferent, middle cardiac nerves in birds, 349

Capillaries, density in skeletal muscle, tortuosity, Animal, Antarctic fish, Diffusion, of O_2 in tissue, Mitochondria, distribution of – in skeletal muscle, Skeletal muscle, diffusion distance, capillary supply, 291

Capillary blood volume, Alveolar pressure, and lung diffusing capacity, Animal, man, Diffusing capacity of the lung, for CO, effects of alveolar pressure, Lung volume, and diffusing capacity, 313

Carboxyhemoglobin, and pulmonary diffusing capacity, Animal, man, Diffusing capacity for CO, Pulmonary capillary volume, 303

Cardiac output, during hyperoxia in carp, Animal, carp, Blood, O_2 transport properties, Hyperoxia, and ventilation in carp, 227

Carotid body, and amiloride, Animal, cat, Drug, amiloride, Hypercapnia, Hypoxia, ion exchange, Na^+-H^+ antiporter, 337

Carotid bodies, and dopamine, Animal, man, Chemoreceptor, modulation by dopamine, Drug, domperidone, medroxyprogesterone acetate, Neurotransmitter, dopamine, 359

Central chemosensitivity, effect of acetylcholine, Acetylcholine, Animal, rat, Chemoreceptor, central –, Drug, atropine, muscarine antagonists, physostigruive, Neonatal rat, 241

Chemoreceptor, arterial –, Animal, cat, Control of breathing, Effect of oscillations of arterial P_{CO_2} and pH, Oscillation of arterial P_{CO_2} and pH, Oscillation and ventilation, 89

Chemoreceptor reflex, Animal, man, Control of breathing, effects of hypoxia, Hypoxia, Model, of hypoxic ventilatory response, 107

Chemoreceptor, central, Acetylcholine, Animal, rat, Central chemosensitivity, effect of acetylcholine, Drug, atropine, muscarine antagonists, physostigruive, Neonatal rat, 241

Chemoreceptor, middle cardiac nerves in birds, intrapulmonary – in birds, Animal cockerel, Control of breathing, chemosensitivity in birds, CO_2 sensitivity, and middle cardiac nerves in birds, Nerve afferent, middle cardiac nerves in birds, 349

Chemoreceptor, modulation by dopamine, Animal, man, Carotid bodies, and dopamine, Drug, domperidone, medroxyprogesterone acetate, Neurotransmitter, dopamine, 359

Control of breathing, Animal, cat, Chemoreceptor, arterial –, Effect of oscillations of arterial P_{CO_2} and pH, Oscillation of arterial P_{CO_2} and pH, Oscillation and ventilation, 89

Control of breathing, effects of hypoxia, Animal, man, Chemoreceptor reflex, Hypoxia, Model, of hypoxic ventilatory response, 107

Control of breathing, arterial chemoreceptors, Animal, man, Exercise, static –, Exercise, ventilatory and cardiovascular response to –, Hyperoxia, and ventilatory responses to exercise, Hypoxia, and ventilatory responses to exercise, 189

Control of breathing, pattern of breathing, Animal, rat, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Recurrent pharyngeal nerve, Respiratory muscles, effects of paralysis on respiration, 203

Control of breathing, pattern of breathing, Animal, rat, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Respiratory muscle, effects of muscle paralysis, Sleep, and respiratory pattern, 213

Control of breathing, chemosensitivity in birds, Animal, cockerel, Chemoreceptor, middle cardiac nerves in birds, intrapulmonary – in birds, CO_2 sensitivity, and middle cardiac nerves in

birds, Nerve afferent, middle cardiac nerves in birds, 349

Cutaneous O_2 uptake, in the frog, Animal, frog, Oxygen uptake, across the skin, 391

Dead space, and sloping alveolar plateau, Animal, dog, Diffusion, in lung gas, Gas exchange, inert gases, respiratory gases, Gas mixing, in alveolar lung, Inert gases, acetylene, Freon 22, Ventilation/perfusion heterogeneity, 137

Dehydration, and camel red cell size, Animal, camel, Blood, red cell size, Osmotic pressure, and red cell size, Red blood cell, size and water exchange, Watering, and camel red cell size, 381

Diffusing capacity for CO, Animal, man, Carboxyhemoglobin, and pulmonary diffusing capacity, Pulmonary capillary volume, 303

Diffusing capacity of the lung, for CO, effects of alveolar pressure, Alveolar pressure, and lung diffusing capacity, Animal, man, Capillary blood volume, Lung volume, and diffusing capacity, 313

Diffusion, in lung gas, Animal, dog, Dead space, and sloping alveolar plateau, Gas exchange, inert gases, respiratory gases, Gas mixing, in alveolar lung, Inert gases, acetylene, Freon 22, Ventilation/perfusion heterogeneity, 137

Diffusion, of O_2 in tissue, Animal, Antarctic fish, Capillaries, density in skeletal muscle, tortuosity, Mitochondria, distribution of – in skeletal muscle, Skeletal muscle, diffusion distance, capillary supply, 291

Dissociation constant, apparent, Animal, squid, toad, Buffer value, Drug, fluoride, nitrilotriacetic acid, Metabolic inhibitor, Muscle gastrocnemius – of toad, mantle – of squid, 275

Drug, amiloride, Animal, rabbit, Drug, bumetamide, disulfonic stilbene, ouabain, Ion transport, across the pleura, Na^+-Cl^- coupled transport, Pleura, liquid resorption, 19

Drug, amiloride, furosemide, ouabain, Animal, dog, Electric properties of tracheal epithelium, Ion transport, at tracheal epithelium, Surfactant, and tracheal epithelium, Tracheal epithelium, bioelectric properties, 41

Drug, amiloride, Animal, cat, Carotid body, and amiloride, Hypercapnia, Hypoxia, ion exchange, Na^+-H^+ antiporter, 337

Drug, atropine, muscarine antagonists, physostigruive, Acetylcholine, Animal, rat, Central chemosensitivity, effect of acetylcholine, Chemoreceptor, central –, Neonatal rat, 241

Drug, bumetamide, disulfonic stilbene, ouabain, Animal, rabbit, Drug, amiloride, Ion transport, across the pleura, Na^+-Cl^- coupled transport, Pleura, liquid resorption, 19

Drug, domperidone, medroxyprogesterone acetate, Animal, man, Carotid bodies, and dopamine, Chemoreceptor, modulation by dopamine, Neurotransmitter, dopamine, 359

Drug, fluoride, nitrilotriacetic acid, Animal, rat, sipunculid, squid, toad, trout, Buffer value, heart, muscle, Heart, buffer value, Muscle, buffer values, pH, intracellular –, 255

Drug, fluoride, nitrilotriacetic acid, Animal, squid, toad, Buffer value, Dissociation constant, apparent –, Metabolic inhibitor, Muscle, gastrocnemius – of toad, mantle – of squid, 275

Drugs, amiloride, ouabain, Alveolar epithelium, ion fluex, Animal, *Xenopus laevis*, Electric properties, of alveolar epithelium, Epithelium membrane potential, Ion fluxes, in alveolar epithelium, 29

Dyspnea, Animal, man, Breath holding, Breathlessness, Hypercapnia, sensation of –, Paralysis, Respiratory muscle, paralysis, Sensation of respiration, 1

EMG, of abdominal muscles, Airway resistance, upper airways, Animal, dog, Respiratory muscles, abdominal –, activity during sleep, Sleep, and respiratory muscles, Wakefulness, and respiratory muscles, 321

Effect of oscillations of arterial P_{CO_2} and pH, Animal, cat, Chemoreceptor, arterial –, Control of breathing, Oscillation of arterial P_{CO_2} and pH, Oscillation and ventilation, 89

Electric properties, of alveolar epithelium, Alveolar epithelium, ion fluex, Animal, *Xenopus laevis*, Drugs, amiloride, ouabain, Epithelium membrane potential, Ion fluxes, in alveolar epithelium, 29

Electric properties of tracheal epithelium, Animal, dog, Drug, amiloride, furosemide, ouabain, Ion transport, at tracheal epithelium, Tracheal epithelium, bioelectric properties, 41

Electromyogram of respiratory muscle, Animal, dog, Expiratory muscle, afferent neural drive, Inspiratory muscle, and hypercapnia, Respiratory muscle, expiratory –, inspiratory –, 165

Electromyogram, of respiratory muscles, Animal,

canary, Respiratory muscle, during bird song, Song production, in birds, 177

Epithelium membrane potential, Alveolar epithelium, ion fluex, Animal, *Xenopus laevis*, Drugs, amiloride, ouabain, Electric properties, of alveolar epithelium, Ion fluxes, in alveolar epithelium, 29

Evaporative water loss, in the bat, Animal, bat, Metabolism, in the bat, Temperature, ambient – and respiration in the bat, 401

Exercise, and airway resistance, Airway resistance, and exercise, Airway smooth muscle, control of –, Animal, dog, Bronchodilation, 51

Exercise, static –, Animal, man, Control of breathing, arterial chemoreceptors, Exercise, ventilatory and cardiovascular responses to –, Hyperoxia, and ventilatory responses to exercise, Hypoxia, and ventilatory responses to exercise, 189

Exercise, ventilatory and cardiovascular responses to –, Animal, man, Control of breathing, arterial chemoreceptors, Exercise, static –, Hyperoxia, and ventilatory responses to exercise, Hypoxia, and ventilatory responses to exercise, 189

Expiratory muscle, afferent neural drive, Animal, dog, Electromyogram of respiratory muscle, Inspiratory muscle, and hypercapnia, Respiratory muscle, expiratory –, inspiratory –, 165

Gas exchange, inert gases, respiratory gases, Animal, dog, Dead space, and sloping alveolar plateau, Diffusion, in lung gas, Gas mixing, in alveolar lung, Inert gases, acetylene, Freon 22, Ventilation/perfusion heterogeneity, 137

Gas mixing, in alveolar lung, Animal, dog, Dead space, and sloping alveolar plateau, Diffusion, in lung gas, Gas exchange, inert gases, respiratory gases, Inert gases, acetylene, Freon 22, Ventilation/perfusion heterogeneity, 137

Heart, buffer value, Animal, rat, sipunculid, squid, toad, trout, Buffer value, heart, muscle, Drug, fluoride, nitrilotriacetic acid, Muscle, buffer values, pH, intracellular –, 255

Hyperbaric respiratory gas, Airway resistance, effects of cold gas breathing, Animal, man, Temperature, cold gas breathing, 413

Hypercapnia, sensation of –, Animal, man, Breath holding, Breathlessness, Dyspnea, Paralysis, Respiratory muscle, paralysis, Sensation of respiration, 1

Hypercapnia, Animal, cat, Carotid body, and amiloride, Drug, amiloride, Hypoxia, ion exchange, Na^+-H^+ antiporter, 337

Hyperoxia, and ventilatory responses to exercise, Animal, man, Control of breathing, arterial chemoreceptors, Exercise, static –, Exercise, ventilatory and cardiovascular responses to –, Hypoxia, and ventilatory responses to exercise, 189

Hyperoxia, and ventilation in carp, Animal, carp, Blood, O_2 transport properties, Cardiac output, during hyperoxia in carp, 227

Hypoxia, Animal, man, Chemoreceptor reflex, Control of breathing, effects of hypoxia, Model, of hypoxic ventilatory response, 107

Hypoxia, and ventilatory responses to exercise, Animal, man, Control of breathing, arterial chemoreceptors, Exercise, static –, Exercise, ventilatory and cardiovascular responses to –, Hyperoxia, and ventilatory responses to exercise, 189

Hypoxia, ion exchange, Na^+-H^+ antiporter, Animal, cat, Carotid body, and amiloride, Drug, amiloride, Hypercapnia, 337

Inert gases, acetylene, Freon 22, Animal, dog, Dead space, and sloping alveolar plateau, Diffusion, in lung gas, Gas exchange, inert gases, respiratory gases, Gas mixing, in alveolar lung, Ventilation/perfusion heterogeneity, 137

Inspiratory muscle, and hypercapnia, Animal, dog, Electromyogram of respiratory muscle, Expiratory muscle, afferent neural drive, Respiratory muscle, expiratory –, inspiratory –, 165

Ion fluxes, in alveolar epithelium, Alveolar epithelium, ion fluex, Animal, *Xenopus laevis, Drugs*, amiloride, ouabain, Electric properties, of alveolar epithelium, Epithelium membrane potential, 29

Ion transport, across the pleura, Animal, rabbit, Drug, amiloride, Drug, bumetamide, disulfonic stilbene, ouabain, Na^+-Cl^- coupled transport, Pleura, liquid resorption, 19

Ion transport, at tracheal epithelium, Animal, dog, Drug, amiloride, furosemide, ouabain, Electric properties of tracheal epithelium, Surfactant, and tracheal epithelium, Tracheal epithelium, bioelectric properties, 41

Larynx, aperture during breathing, Airway resistance, larynx, Animal, man, Resistive loading, laryngeal response to –, Upper airways, receptors in –, 371

Lung volume, and diffusing capacity, Alveolar pressure, and lung diffusing capacity, Animal, man, Capillary blood volume, Diffusing capacity of the lung, for CO, effects of alveolar pressure, 313

Metabolic inhibitor, Animal, squid, toad, Buffer value, Dissociation constant, apparent –, Drug, fluoride, nitrilotriacetic acid, Muscle, gastrocnemius – of toad, mantle – of squid, 275

Metabolism, in the bat, Animal, bat, Evaporative water loss, in the bat, Temperature, ambient – and respiration in the bat, 401

Mitochondria, distribution of – in skeletal muscle, Animal, Antarctic fish, Capillaries, density in skeletal muscle, tortuosity, Diffusion, of O_2 in tissue, Skeletal muscle, diffusion distance, capillary supply, 291

Model, of hypoxic ventilatory response, Animal, man, Chemoreceptor reflex, Control of breathing, effects of hypoxia, Hypoxia, 107

Muscle, buffer values, Animal, rat, sipunculid, squid, toad, trout, Buffer value, heart, muscle, Drug, fluoride, nitrilotriacetic acid, Heart, buffer value, pH, intracellular –, 255

Muscle, gastrocnemius – of toad, mantle – of squid, Animal, squid, toad, Buffer value, Dissociation constant, apparent –, Drug, fluoride, nitrilotriacetic acid, Metabolic inhibitor, 275

Na^+-Cl^- coupled transport, Animal, rabbit, Drug, amiloride, Drug, bumetamide, disulfonic stilbene, ouabain, Ion transport, across the pleura, Pleura, liquid resorption, 19

Neonatal rat, Acetylcholine, Animal, rat, Central chemosensitivity, effect of acetylcholine, Chemoreceptor, central –, Drug, atropine, muscarine antagonists, physostigruive, 241

Nerve afferent, middle cardiac nerves in birds, Animal, cockerel, Chemoreceptor, middle cardiac nerves in birds, intrapulmonary – in birds, Control of breathing, chemosensitivity in birds, CO_2 sensitivity, and middle cardiac nerves in birds, 349

Neurotransmitter, dopamine, Animal, man, Carotid bodies, and dopamine, Chemoreceptor, modulation by dopamine, Drug, domperidone, medroxyprogesterone acetate, 359

Oscillation of arterial P_{CO_2} and pH, Animal, cat, Chemoreceptor, arterial –, Control of breathing, Effect of oscillations of arterial P_{CO_2} and pH, Oscillation and ventilation, 89

Oscillation and ventilation, Animal, cat, Chemoreceptor, arterial –, Control of breathing, Effect of oscillations of arterial P_{CO_2} and pH, Oscillation of arterial P_{CO_2} and pH, 89

Osmotic pressure, and red cell size, Animal, camel, Blood, red cell size, Dehydration, and camel red cell size, Red blood cell, size and water exchange, Watering, and camel red cell size, 381

Oxygen uptake, across the skin, Animal, frog, Cutaneous O_2 uptake, in the frog, 391

Paralysis, Animal, man, Breath holding, Breathlessness, Dyspnea, Hypercapnia, sensation of –, Respiratory muscle, paralysis, Sensation of respiration, 1

Pattern of breathing, and lung volume, Animal, man, Sleep, and pattern of breathing, Vagus nerve, and pattern of breathing, 77

Pattern of breathing, effects of muscle paralysis, Animal, rat, Control of breathing, pattern of breathing, Phrenic nerve, Recurrent pharyngeal nerve, Respiratory muscles, effects of paralysis on respiration, 203

Pattern of breathing, effect of muscle paralysis, Animal, rat, Control of breathing, pattern of breathing, Phrenic nerve, Respiratory muscle, effects of muscle paralysis, Sleep, and respiratory pattern, 213

pH, intracellular –, Animal, rat, sipunculid, squid, toad, trout, Buffer value, heart, muscle, Drug, fluoride, nitrilotriacetic acid, Heart, buffer value, Muscle, buffer values, 255

Phrenic nerve, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Recurrent pharyngeal nerve, Respiratory muscles, effects of paralysis on respiration, 203

Phrenic nerve, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Respiratory muscle, effects of muscle paralysis, Sleep, and respiratory pattern, 213

Pleura, liquid resorption, Animal, rabbit, Drug, amiloride, Drug, bumetamide, disulfonic stilbene, ouabain, Ion transport, across the pleura, Na^+-Cl^- coupled transport, 19

Pulmonary circulation, pressure–flow relation, Animal, dog, Pulmonary vascular resistance, Vasodilator, of pulmonary vessels, Vasomotor tone in pulmonary circulation, 63

Pulmonary vascular resistance, Animal, dog, Pulmonary circulation, pressure–flow relation, Vasodilator, of pulmonary vessels, Vasomotor tone in pulmonary circulation, 63

Pulmonary capillary volume, Animal, man, Carboxyhemoglobin, and pulmonary diffusing capacity, Diffusing capacity for CO, 303

Recurrent pharyngeal nerve, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Respiratory muscles, effects of paralysis on respiration, 203

Red blood cell, size and water exchange, Animal, camel, Blood, red cell size, Dehydration, and camel red cell size, Osmotic pressure, and red cell size, Watering, and camel red cell size, 381

Resistive loading, laryngeal response to –, Airway resistance, larynx, Animal, man, Larynx, aperture during breathing, Upper airways, receptors in –, 371

Respiratory muscle, paralysis, Animal, man, Breath holding, Breathlessness, Dyspnea, Hypercapnia, sensation of –, Paralysis, Sensation of respiration, 1

Respiratory drive, Airway pressure, Airway resistance, upper –, Alcohol, and airway resistance, Animal, man, CO_2 rebreathing, 153

Respiratory muscle, expiratory –, inspiratory –, Animal, dog, Electromyogram of respiratory muscle, Expiratory muscle, afferent neural drive, Inspiratory muscle, and hypercapnia, 165

Respiratory muscle, during bird song, Animal, canary, Electromyogram, of respiratory muscles, Song production, in birds, 177

Respiratory muscles, effects of paralysis on respiration, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Recurrent pharyngeal nerve, 203

Respiratory muscle, effects of muscle paralysis, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Sleep, and respiratory pattern, 213

Respiratory muscles, abdominal –, activity during sleep, Airway resistance, upper airways, Animal, dog, EMG, of abdominal muscles, Sleep, and respiratory muscles, Wakefulness, and respiratory muscles, 321

Sensation of respiration, Animal, man, Breath holding, Breathlessness, Dyspnea, Hypercapnia, sensation of –, Paralysis, Respiratory muscle, paralysis, 1

Skeletal muscle, diffusion distance, capillary supply, Animal, Antarctic fish, Capillaries, density in skeletal muscle, tortuosity, Diffusion, of O_2 in tissue, Mitochondria, distribution of – in skeletal muscle, 291

Sleep, and pattern of breathing, Animal, man, Pattern of breathing, and lung volume, Vagus nerve, and pattern of breathing, 77

Sleep, and respiratory pattern, Animal, rat, Control of breathing, pattern of breathing, Pattern of breathing, effects of muscle paralysis, Phrenic nerve, Respiratory muscle, effects of muscle paralysis, 213

Sleep, and respiratory muscles, Airway resistance, upper airways, Animal, dog, EMG, of abdominal muscles, Respiratory muscles, abdominal –, activity during sleep, Wakefulness, and respiratory muscles, 321

Song production, in birds, Animal, canary, Electromyogram, of respiratory muscles, Respiratory muscle, during bird song, 177

Surfactant, and tracheal epithelium, Animal, dog, Drug, amiloride, furosemide, ouabain, Electric properties of tracheal epithelium, Ion transport, at tracheal epithelium, Tracheal epithelium, bioelectric properties, 41

Tachykinin, Airway resistance, and heart ligation, Animal, guinea pig, Bronchoconstriction, and tachykinins, 75

Temperature, ambient – and respiration in the bat, Animal, bat, Evaporative water loss, in the bat, Metabolism, in the bat, 401

Temperature, cold gas breathing, Airway resistance, effects of cold gas breathing, Animal, man, Hyperbaric respiratory gas, 413

Tracheal epithelium, bioelectric properties, Animal, dog, Drug, amiloride, furosemide, ouabain, Electric properties of tracheal epithelium, Ion transport, at tracheal epithelium, Surfactant, and tracheal epithelium, 41

Upper airways, receptors in –, Airway resistance, larynx, Animal, man, Larynx, aperture during breathing, Resistive loading, laryngeal response to –, 371

Vagus nerve, and pattern of breathing, Animal, man, Pattern of breathing, and lung volume, Sleep, and pattern of breathing, 77

Vasodilator, of pulmonary vessels, Animal, dog, Pulmonary circulation, pressure–flow relation, Pulmonary vascular resistance, Vasomotor tone in pulmonary circulation, 63

Vasomotor tone in pulmonary circulation, Animal, dog, Pulmonary circulation, pressure–flow relation, Pulmonary vascular resistance, Vasodilator, of pulmonary vessels, 63

Ventilation/perfusion heterogeneity, Animal, dog, Dead space, and sloping alveolar plateau, Diffusion, in lung gas, Gas exchange, inert gases, respiratory gases, Gas mixing, in alveolar lung, Inert gases, acetylene, Freon 22, 137

Wakefulness, and respiratory muscles, Airway resistance, upper airways, Animal, dog, EMG, of abdominal muscles, Respiratory muscles, abdominal –, activity during sleep, Sleep, and respiratory muscles, 321

Watering, and camel red cell size, Animal camel, Blood, red cell size, Dehydration, and camel red cell size, Osmotic pressure, and red cell size, Red blood cell, size and water exchange, 381